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(54) **Improvements relating to closures**

(57) A closure for application to the screw-threaded neck of a container is moulded in one piece from a resilient plastics material and has a top 11 with a dependent skirt 12 screw-threaded on its internal surface. Spaced below the top 11 the skirt has an inwardly projecting rib 14. An outwardly projecting rib 17 is connected to the top 11 and forms with rib 14 a downwardly open channel for receiving the top portion of the neck of the container. Ribs 20 are formed on the underside of the top 11 and project downward into the channel to form a seal with the top edge of the neck. In a variant, rib 14 is replaced by two, undercut, triangular section ribs (25, 26, Fig. 2) and rib 17 has two similar ribs (28, 29) at the other side of the channel.

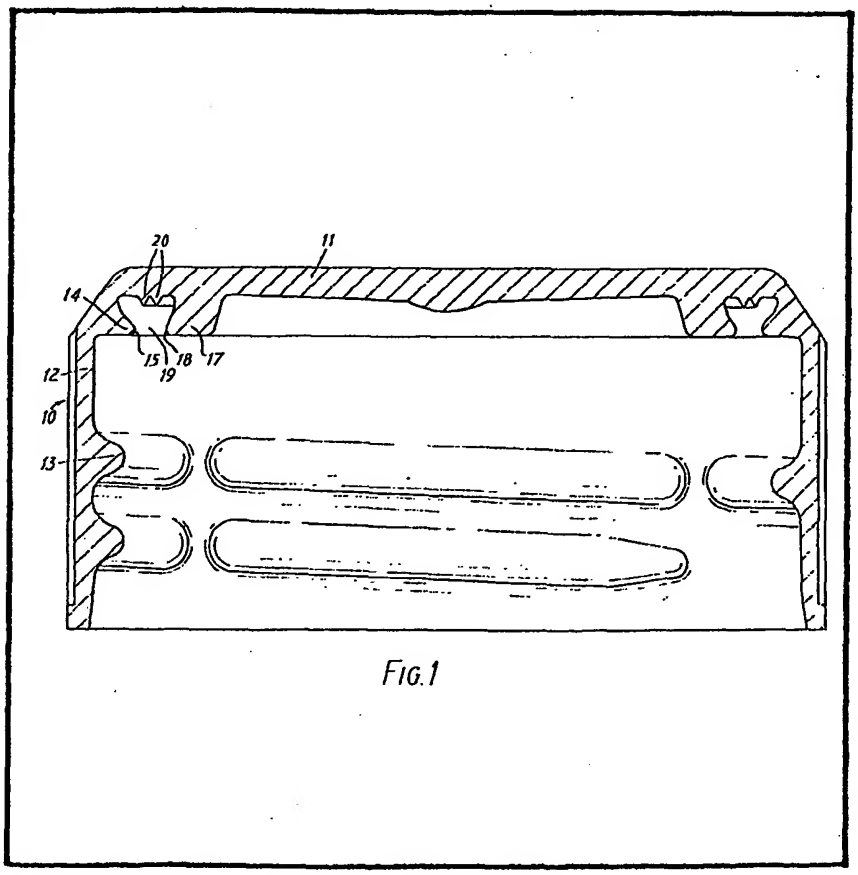

FIG.1

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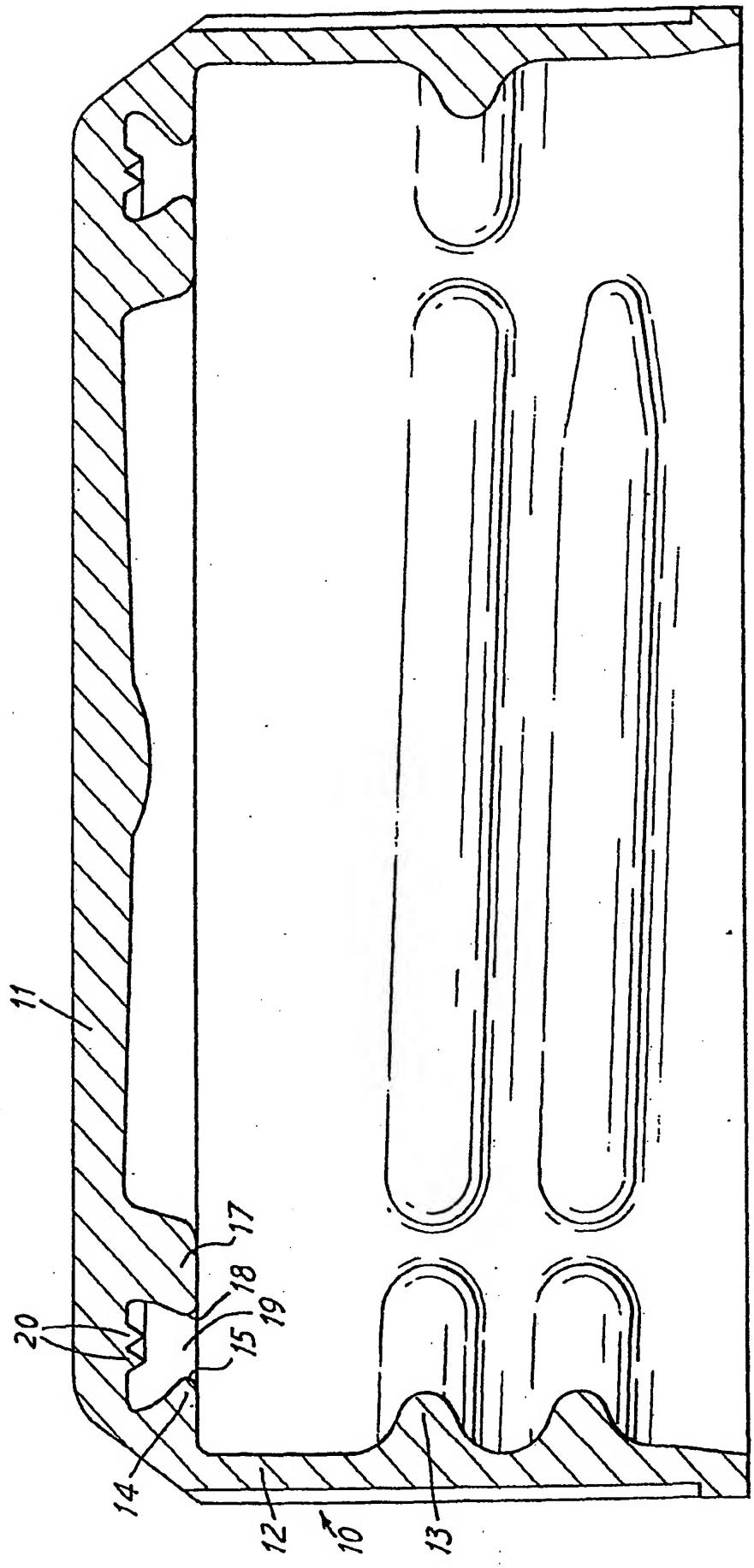

FIG.1

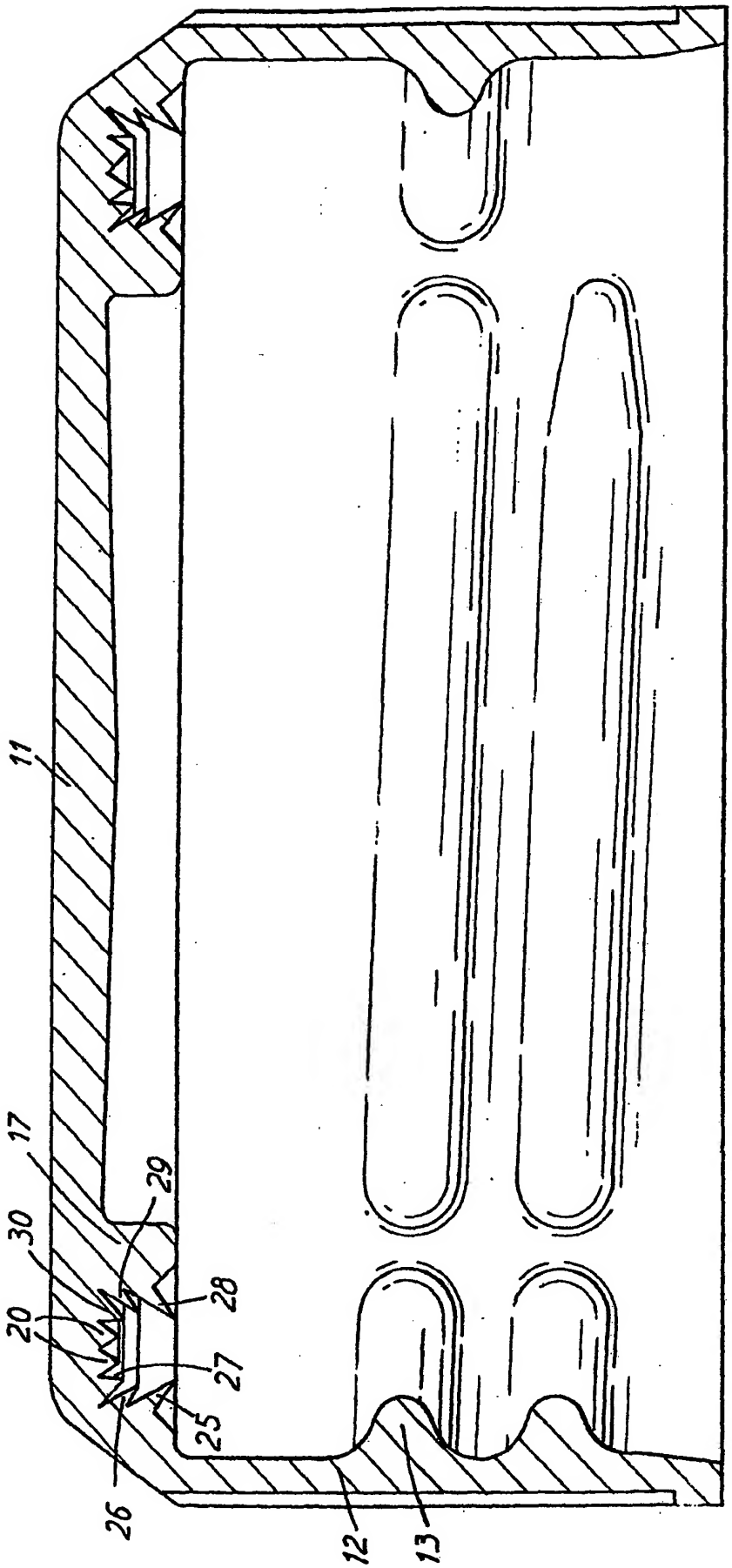

FIG.2

SPECIFICATION

Improvements relating to closures

This invention relates to closures.

According to the invention there is provided a closure for application to the externally threaded neck of a container, which closure is moulded in one piece from a plastics material and comprises a top and a depending skirt having an internal screw-thread, a first annular sealing rib extending radially inwardly from the internal surface of the skirt at a location above the screw thereof and spaced below the top of the closure, and a radially outwardly directed second annular sealing rib depending from the underside of the top, so as with the top and skirt to form an annular channel for accommodating the top edge portion of the neck of the container and forming a seal by engagement of the first and/or second sealing rib with said top edge portion, the top of the closure being formed with one or more further annular sealing ribs projecting downward into the channel to form a seal with the top edge of the neck portion of the container.

The invention will now be described in more detail with reference to the accompanying drawings in which:

Figure 1 shows a first embodiment of the invention in axial section, and

Figure 2 shows a second embodiment of the invention in axial section.

Referring to Figure 1 a closure 10 is moulded in one piece from a resilient plastics material. The closure is designed to provide a seal for a bottole containing a beverage under pressure i.e. a carbonated pressure and to be re-usable to re-seal the bottle after part of its contents have been removed. The closure has a top 11 and a skirt 12 which is internally screw-threaded, and externally knurled for improvement manual grip. Above its screw-thread ridge 13 and adjacent the top the skirt has an internal radially-inwardly projecting sealing rib 14 the tip 15 of which extends inward to a greater extent than the screw-thread ridge 13. The tip 15 of the rib is in this instance radiussed.

Spaced radially inwardly from rib 14 the top 11 has a downwardly and outwardly extending rib 17 the tip 18 of which is radiussed and projects towards rib 14. The ribs 14, 17 and the top together define an annular channel 19 to receive and form a seal with the top edge portions of the neck of the bottole, and the top 11 has in the channel two triangular section sealing ribs 20 for engaging the end face of the neck of the bottle.

In use of the closure, the end portion of the neck of the bottle is forced into the channel as the closure is screwed home so that the sealing ribs 14 and 17 can engage xternal and internal surfaces respectively of the neck to form a seal and so that the ribs 20 come into sealing engagement with the top end of the neck. Th positions of and spacing b tween the ribs 14 and 17 are preferably determined in accordance with the tolerances on the neck size of the bottle. For example the tolerance on the neck diameter of a glass bottle is based on the outside diameter, and it is arranged that when the neck diameter is on the upper limit the outer rib 14 is in full sealing engagement with the neck and on the lower limit, a rib 14 is in light sealing contact with the neck. The internal diameter of the neck is not the subject of tolerance but tends to be a pre-determined amount less than the outside diameter and in consequence, the sealing pressure between the inner rib 17 and the internal surface of the neck tends to vary inversely as the pressure of rib 14 on the neck, so that a lighter sealing pressure by one of ribs 14, 17 is compensated by a heavier pressure by the other rib.

In a variant illustrated in Figure 2 of the drawings, rib 14 is replaced by two triangular ribs 25, 26 which are disposed in series and which are undercut at their sides remote from the top 11, and an additional similarly undercut triangular rib 27 is disposed so as for sealing engagement with the radiussed outer corner portion of the neck of the bottle. Rib 17 is replaced by triangular ribs 28, 29 which are undercut at their sides remote from the top 11, and an additional similarly undercut rib 30 is disposed for sealing engagement with the radiussed inner corner portion of the neck. The sealing apices of these ribs may have an included angle of 30°.

Claims (filed on 28/10/83)

1. A closure for application to the externally threaded neck of a container, which closure is moulded in one piece from a resilient plastics material and comprises a top and a depending skirt having an internal screw-thread, a first annular sealing rib extending radially inwardly from the internal surface of the skirt at a location above the screw-thread thereof and spaced below the top of the closure, and a radially outwardly directed second annular sealing rib connected to the top, so as with the top and skirt to form an annular channel for accommodating the top portion of the neck of the container and forming a seal by engagement of the first and/or second sealing rib with the radially outer and/or radially inner surfaces respectively of said top portion of the neck, the top of the closure being formed with one or more further annular sealing ribs projecting downward into the channel to form a seal with the top of the neck of the container.

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